

Applicant: ESAB AB
Serial Number: 09/402185
Attorney Docket: S746
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CLAIM AMENDMENTS

1-2. (Cancelled)

3. (Previously Presented)

A friction stir welding method according to which workpieces (2,3) to be welded are positioned on a work-table (7) and by means of clamping means (5,6) clamped to one another and/or to the work-table and according to which a rotating welding means (12, 13) is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means, and the joint is heated by a heating element positioned underneath the joint.

4-8 (Cancelled)

9. (Previously Presented)

An apparatus (1) for friction stir welding, comprising a work-table (7) supporting workpieces (2,3) to be welded, at least one clamping means (5,6) for clamping the workpieces to one another and/or to the work-table, a welding means (12, 13) adapted to be advanced along a joint between the workpieces while being pressed against said workpieces during the welding and, it comprises a heating element positioned underneath the joint wherein a heating element (70) for supply of additional heat to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means.

10-12 (Cancelled)

13. (Previously Presented)

A method as claimed in claim 3, further comprising the step of pre-heating the joint to a maximum of 250°C below the fusion temperature of the material of the joint.

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14. (Previously Presented)

A method as claimed in claim 13, wherein the joint is supported by a subjacent backing means (7b) which is preheated to a temperature in excess of 100°C.

15. (Previously Presented)

A friction stir welding method according to which workpieces (2,3) to be welded are positioned on a work-table (7) and by means of clamping means (5,6) clamped to one another and/or to the work-table and according to which a rotating welding means (12, 13) is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means, and the joint is supported by a subjacent backing means (7b) which is preheated to a temperature in excess of 100°C.

16. (Previously Presented)

A method as claimed in claim 15, wherein the backing means is heated to a temperature in the range of 150-250°C.

17. (Previously Presented)

A method as claimed in claim 15, wherein the backing means is heated to a temperature in the range of 500-1000°C.

18. (Previously Presented)

A method as claimed in claim 15, wherein the backing means (7b) is heated by a heating coil (70) built into backing means.

19. (Previously Presented)

An apparatus as claimed in claim 9, wherein a backing means (7b) positioned underneath the joint.

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20. (Previously Presented)

An apparatus as claimed in claim 19, wherein the backing means (7b) is adapted to be heated by the heating element (70).

21. (Previously Presented)

An apparatus as claimed in claim 20, wherein the heating element is a heating coil (70) built into the backing means (7b).